

ADDITIONAL NOTES ON THE GENUS VERBENA. XIII

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VERBENA [Dorst.] L.

Additional & emended bibliography: Macer Floridus, De Virib. Herb., pr. 2, xxxiii--xxxv. 1490; Brunf., Herb. Viv. Icon., ed. 1, 1: 119, 120, & [267] (1530) and ed. 2, 1: 119, 120, & [267]. 1532; Macer, Herb. Virib. 133--135, 164, 167, & 199--200. 1581; Gerarde, Herb., ed. 1, 580--582, fig. 1 & 2 (1597) and ed. 2, 717--719, fig. 1 & 2. 1633; Ray, Hist. Pl. 2: 1336 & [1967]. 1693; Sauzé & Maillard, Fl. Dép. Deux-Sèvres, ed. 1, 2 (2): 26. 1880; Thomé, Fl. Deutschl. 4: 171--173, pl. 531. 1889; Sanders, Encycl. Gard., ed. 2, 409--410. 1897; Druce, Fl. Berks. 390 & 641. 1898; Chadwick, N. Y. State Mus. Bull. 124: 150. 1908; Felt, N. Y. State Mus. Bull. 124: 408 (1908) and 200: 181--182, 225, & 309. 1917; H. H. Thomas, Round Year Gard., ed. 2, pr. 1, 122 (1920), ed. 2, pr. 2, 122 (1923), and ed. 2, pr. 3, 122. 1926; Sanders, Encycl. Gard., ed. 19, 447--449. 1930; Macself in Sanders, Encycl. Gard., ed. 21, pr. 1, 456--457 & 459. 1931; G. Klein, Handb. Pflanzenanal. 2 (1): 505 & 968 (1932), 3 (1): 574, 583, 614, 616, 635, 640, 644, 647, & 664 (1932), 3 (2): 932 (1932), and 4 (2): 867, 873, & 1860. 1933; Macself in Sanders, Encycl. Gard., ed. 21, pr. 2, 456--457 & 459. 1934; Nemoto, Fl. Jap. Suppl. [Nipp. Shokub. Soran-hoi] 626. 1936; Takenouchi, Journ. Nat. Hist. Fukuoka 2: 15. 1936; Macself in Sanders, Encycl. Gard., ed. 21, pr. 3, 456--457 & 459 (1938), ed. 21, pr. 4, 456--457 & 459 (1942), and ed. 21, pr. 5, 456--457 & 459. 1945; Schnack & Covas, Darwiniana 7: [71]--79, pl. 1--5. 1945; Covas & Schnack, Darwiniana 7: 85--86, fig. 1 & 2. 1945; Macself in Sanders, Encycl. Gard., ed. 21, pr. 6, 456--457 & 459. 1946; Prased, Indian Forest. 75: 38. 1949; Hellyer in Sanders, Encycl. Gard., ed. 22, pr. 1, 456--457 & 459 (1950), ed. 22, pr. 2, 506--508 (1952), and ed. 22, pr. 3, 506--508. 1956; Letty, Dyer, Verdoorn, & Codd, Wild Fls. Transv. 280 & 281. 1962; Anon., Cat. Sem. Hort. Bot. Univ. Valent. 27. 1963; Anon., Delect. Sem. Hort. Bot. Cent. Thbilis. Georg. 25. 1966; Hutchins, Sida 3: 182. 1967; Battersby, Hall, & Southgate, Journ. Chem. Soc. Lond. Sec. C 5: 721--728. 1969; Raman, Curr. Sci. 38: 579--580. 1969; Raju, Bull. Bot. Soc. Bengal 23: [69] & 70. 1969; S. P. & R. N. Banerjee, Bull. Bot. Soc. Bengal 23: 168. 1969; Macer, Virib. Herb., ed. 2, pr. 2, [86]--[88]. 1970; J. Harris Co. [Rochester, N. Y.], Care Home Gard., rev. ed., 21, 23, & 32. 1970; Anon., Hort. Abstr. 40: 809. 1970; Schmelzer, Phytopath. Zeit. 67: 309. 1970; Anon., Hort. Abstr. 41: 1108 & 1117. 1971; Anon., Zierpflanzenbau 11: 187--189. 1971; Khoshoo & Arora, Am. Hort. Mag. 50: 16--18, fig. 1--5. 1971; Cadbury, Hawkes, & Readett, Comput.-map. Fl. Warwicksh. 197. 1971; G. E. Tucker, Castanea 37: 23. 1972; Moldenke, Phytologia 23: 257--303. 1972; A. L. Moldenke, Phytologia 23: 317 & 318. 1972; Hinton & Rzedowski, Journ. Arn. Arb. 53: 167. 1972.

The Druce (1898) work, cited above, although dated "1897" on

its title-page, was not actually published until 1898, according to an author in Journ. Bot. 36: 104 (1898).

Beutermueller (1907) reports the itonid "vervain leaf midge", Itonida verbenae Beutm., attacking members of the genus Verbena; Felt (1911) reports the itonid, Cecidomyia sp. and the same authority (1908) reports another itonid, Lestodiplosis verbenifolia Felt, from this genus. The vervain leaf midge causes marginal leaf rolls; the first-mentioned of Felt's itonids causes irregular oval stem galls, 3--5 mm. long, and the second is probably predaceous in rolled leaves.

Parks (1937), in speaking of V. quadrangulata Heller, notes that "There are twenty-two other species of verbena within the state [of Texas]. These range from annuals through perennials and through color from white to deep blue. A number of these have been taken into cultivation and can be purchased from seed stores. Some of the blue-flowered species produce quite large and showy spikes of flowers but as yet have not become common in cultivation. Those wishing to try new flowers should attempt the cultivation of the wild verbenas found within their own territories."

VERBENA AMBROSIFOLIA Rydb.

Additional synonymy: Glandularia ambrosifolia Schnack & Covas, Darwiniana 7: [71], in textu. 1945.

Additional & emended bibliography: Schnack & Covas, Darwiniana 7: [71]. 1945; Moldenke, Phytologia 23: 258. 1972.

Additional citations: NEW MEXICO: Sierra Co.: Spellenberg & Todsén 2543 (N).

VERBENA BONARIENSIS L.

Additional bibliography: Macself in Sanders, Encycl. Gard., ed. 21, pr. 1, 457 (1931), ed. 21, pr. 2, 457 (1934), ed. 21, pr. 3, 457 (1938), ed. 21, pr. 4, 457 (1942), ed. 21, pr. 5, 457 (1945), and ed. 21, pr. 6, 457. 1946; Hellyer in Sanders, Encycl. Gard., ed. 22, pr. 1, 457 (1950), ed. 22, pr. 2, 506 & 507 (1952), and ed. 22, pr. 3, 506 & 507. 1956; Moldenke, Phytologia 23: 259, 265, 289, 290, 292, & 293. 1972.

VERBENA BRACTEATA Lag. & Rodr.

Additional bibliography: Anon., Cat. Sem. Hort. Univ. Valent. 27. 1963; Moldenke, Phytologia 23: 259. 1972; A. L. Moldenke, Phytologia 23: 317. 1972.

VERBENA CANADENSIS (L.) Britton

Additional bibliography: Macself in Sanders, Encycl. Gard., ed. 21, pr. 1, 457 (1931), ed. 21, pr. 2, 457 (1934), ed. 21, pr. 3, 457 (1938), ed. 21, pr. 4, 457 (1942), and ed. 21, pr. 5, 457. 1945; Schnack & Covas, Darwiniana 7: [71]. 1945; Macself in Sanders, Encycl. Gard., ed. 21, pr. 6, 457. 1946; Hellyer in Sanders, Encycl. Gard., ed. 22, pr. 1, 457 (1950), ed. 22, pr. 2, 506 & 507 (1952), and ed. 22, pr. 3, 506 & 507. 1956; Schmelzer, Phyto-

path. Zeit. 67: 309. 1971; Moldenke, Phytologia 23: 259--260 & 265. 1972.

VERBENA COMONDUENSIS Moldenke

Additional bibliography: Moldenke, Phytologia 23: 193. 1972.

Additional citations: MEXICO: Baja California: Moldenke & Moldenke 25407 (Ws).

VERBENA CRITHMIFOLIA Gill. & Hook.

Additional & emended bibliography: Schnack & Covas, Darwiniana 7: [71], 72, 74, & 75. 1945; Moldenke, Phytologia 23: 260 & 271. 1972.

Bolkhovskikh & his associates (1969) cite the Darlington & Wyllie (1956) reference in the bibliography of this species as "Darlington, Chrom. Numb. Flow. Pl. 1955".

VERBENA GOODINGII Briq.

Additional bibliography: Moldenke, Phytologia 23: 234--237. 1972.

Holmgren found this species "locally common" on rocky basalt slopes. The corolla is described as having had its "tube pale-yellow, lobes blue" on N. H. Holmgren 3308.

Additional citations: ARIZONA: Mohave Co.: N. H. Holmgren 3308 (N).

VERBENA HASTATA L.

Additional & emended bibliography: Felt, N. Y. State Mus. Bull. 200: 182. 1917; Moldenke, Phytologia 23: 261--268. 1972; G. E. Tucker, Castanea 37: 23. 1972.

Tucker (1972) records this species from Ashe County, North Carolina.

VERBENA HOOKERIANA (Covas & Schnack) Moldenke

Additional & emended bibliography: Schnack & Covas, Darwiniana 7: [71] & 72. 1945; Moldenke, Phytologia 23: 270--271. 1972.

xVERBENA HYBRIDA Voss

Additional synonymy: Verbena hybrida cv. drandiflora Hort. ex Anon., Delect. Sem. Hort. Cent. Thbil. Georg. 25, sphalm. 1966.

Additional bibliography: Sanders, Encycl. Gard., ed. 2, 409--410 (1897) and ed. 19, 447--449. 1930; Macself in Sanders, Encycl. Gard., ed. 21, pr. 1, 456--457 & 459 (1931), ed. 21, pr. 2, 456--457 & 459 (1934), ed. 21, pr. 3, 456--457 & 459 (1938), ed. 21, pr. 4, 456--457 & 459 (1942), ed. 21, pr. 5, 456--457 & 459 (1945), and ed. 21, pr. 6, 456--457 & 459. 1946; Hellyer in Sanders, Encycl. Gard., ed. 22, pr. 1, 456--457 & 459 (1950), ed. 22, pr. 2, 506--508 (1952), and ed. 22, pr. 3, 506--508. 1956; Anon., Delect. Sem. Hort. Bot. Cent. Thbilis. Georg. 25. 1966; Raman, Curr. Sci. 38: [579]--580. 1969; J. Harris Co. [Rochester, N. Y.], Care Home Gard., rev. ed., 21, 23, & 32. 1970; Anon., Hortic. Abstr. 40: 809 (1970) and 41: 1108 & 1117. 1971; Anon.,

Zierpflanzenbau 11: 187--189. 1971; Khoshoo & Arora, Am. Hort. Mag. 50: 16--18, fig. 1, 3, & 5. 1971; Moldenke, Phytologia 23: 271--278. 1972; A. L. Moldenke, Phytologia 23: 318. 1972.

Additional illustrations: Khoshoo & Arora, Am. Hort. Mag. 50: 16--18, fig. 1, 3, & 5. 1971.

An anonymous writer (1971) gives germination percentages and notes on seedlings and seedling development from pelleted seeds of this plant. Raman (1969) states that the absorption spectrum of the acetone extract from a purple corolla showed 3 peaks in the green-blue, green, and yellow regions, a characteristic of florachrome.

An additional horticultural variety offered is

Ruffled White (Burpee) -- a "superb sweetly scented variety producing large well-filled trusses of pure white flowers so freely that the display has the appearance of a white carpet"; represented by Burpee seed no. 3177.

VERBENA INCISA Hook.

Additional bibliography: Sanders, Encycl. Gard., ed. 2, 409. 1897; Moldenke, Phytologia 23: 278--280 & 300. 1972; A. L. Moldenke, Phytologia 23: 318. 1972.

VERBENA LACINIATA (L.) Briq.

Additional bibliography: Macself in Sanders, Encycl. Gard., ed. 21, pr. 1, 457 (1931), ed. 21, pr. 2, 457 (1934), ed. 21, pr. 3, 457 (1938), ed. 21, pr. 4, 457 (1942), ed. 21, pr. 5, 457 (1945), and ed. 21, pr. 6, 457. 1946; Hellyer in Sanders, Encycl. Gard., ed. 22, pr. 1, 457 (1950), ed. 22, pr. 2, 506 & 507 (1952), and ed. 22, pr. 3, 506 & 507. 1956; Raman, Curr. Sci. 38: [579]. 1969; Moldenke, Phytologia 23: 282--284. 1972.

The "Verbena erinoides" and "Verbena ericoides" of Macself (1931--1946) and of Hellyer (1950--1956) are almost certainly V. tenuisecta Briq.

VERBENA LITORALIS H.B.K.

Additional bibliography: Moldenke, Phytologia 23: 270 & 288--295. 1972; Hinton & Rzedowski, Journ. Arn. Arb. 53: 167. 1972.

VERBENA LITORALIS var. ALBIFLORA Moldenke

Additional bibliography: Moldenke, Phytologia 23: 294. 1972; Hinton & Rzedowski, Journ. Arn. Arb. 53: 167. 1972.

VERBENA MACDOUGALII Heller

Additional bibliography: Moldenke, Phytologia 23: 265 & 297--298. 1972.

The Holmgrens describe this species as "locally common along roadsides in ponderosa pine forests".

Additional citations: ARIZONA: Coconino Co.: Holmgren & Holmgren 4691 (N).

VERBENA MENTHAEFOLIA Benth.

Emended synonymy: Verbena hintonii Moldenke, Alph. List Inval-

id Names Suppl. 1: 24, in syn. 1947; Hinton & Rzedowski, Journ. Arn. Arb. 53: 167. 1972.

Additional bibliography: Moldenke, Phytologia 23: 301--303. 1972; Hinton & Rzedowski, Journ. Arn. Arb. 53: 167. 1972.

VERBENA MICROPHYLLA H.B.K.

Additional synonymy: Glandularia microphylla Schnack & Covas, Darwiniana 7: [71], 72, & 74, pl. 3 D, in textu. 1945.

Additional & emended bibliography: Schnack & Covas, Darwiniana 7: [71], 72, & 74, pl. 3 D. 1945; Moldenke, Phytologia 23: 303. 1972.

Emended illustrations: Schnack & Covas, Darwiniana 7: pl. 3 D. 1945.

Material has been misidentified and distributed in some herbaria as Geranium sp. On the other hand, the Mutis 1919, distributed as V. microphylla, is actually V. ciliata Benth., Mutis 3691 is V. trifida H.B.K., and A. S. Hitchcock 21737, Pachano 144, and Rose & Rose 22400 are Hierobotana inflata (H.B.K.) Briq.

Additional citations: ECUADOR: Chimborazo: D. H. Knight 401 (Ws). PERU: Puno: Vargas Calderón 20883 (Ac). CHILE: Santiago: Zöllner 3070 (Lk). ARGENTINA: Tucumán: Olea 236 (N).

VERBENA MINUTIFLORA Briq.

Synonymy: Verbena minutiflora "Briq. ex Moldenke" apud Angely, Fl. Anal. Paran., ed. 1, 572. 1965.

Additional bibliography: Angely, Fl. Anal. Paran., ed. 1, 572. 1965; Moldenke, Phytologia 16: 98, 101, & 102. 1968; Angely, Fl. Anal. Fitogeogr. Est. S. Paulo, ed. 1, 4: 840 & xix, map 1395. 1970; Moldenke, Fifth Summ. 1: 178 & 190 (1971) and 2: 684 & 917. 1971; Moldenke, Phytologia 23: 293. 1972.

The corollas on Hatschbach 22483 are described as having been "lilac" in color when fresh.

Additional citations: BRAZIL: Paraná: Hatschbach 22483 (Rf); Reitz & Klein 17805 (N, W--2548334). Rio Grande do Sul: Rambo 45339 (Au--122317, Au--122321, Go). Santa Catarina: Smith & Klein 13469 (N).

xVERBENA MOECHINA Moldenke

Additional synonymy: Verbena urticifolia angustifolia Bebb, in herb.

Additional bibliography: Moldenke, Phytologia 16: 101--102. 1968; Moldenke, Fifth Summ. 1: 34--39, 44, 45, 47, 53, & 371 (1971) and 2: 522, 651, 672, 679, 695--698, 708, & 917. 1971; Moldenke, Phytologia 23: 265. 1972.

Additional citations: ILLINOIS: Winnebago Co.: M. S. Bebb s.n. [Fountaindale] (Pa). MISSOURI: Saint Louis: Drummond s.n. [St. Louis, N. Am.] (Au--122287); Eggert s.n. [Prairies, Sept. 1891] (Pa); Engelmann s.n. [St. Louis, July 1842] (Au--122722).

VERBENA MONACENSIS Moldenke

Additional bibliography: Moldenke, *Phytologia* 10: 157—158. 1964; Moldenke, *Fifth Summ.* 1: 371 (1971) and 2: 917. 1971.

VERBENA MONTEVIDENSIS Spreng.

Additional & emended bibliography: Cabrera, *Fl. Alred. Buenos Aires* 395 & 397. 1953; Darlington & Wylie, *Chrom. Atl.*, pr. 1, 323. 1956; Schnack, Fehleisen, & Cocucci, *Revist. Fac. Agron. La Plata* 35: [47], 49, [54], & 55, fig. 3. 1959; Darlington & Wylie, *Chrom. Atl.*, pr. 2, 323. 1961; Angely, *Fl. Anal. Paran.*, ed. 1, 571 & 572. 1965; Troncoso in Cabrera, *Fl. Prov. Buenos Aires* 5: 128 & 131. 1965; Moldenke, *Phytologia* 16: 98, 101, & 102. 1968; Moldenke, *Résumé Suppl.* 16: 7. 1968; Bolkh., Grif, Matvej., & Zakhar., *Chrom. Numb. Flow. Pl.* 717. 1969; Moldenke, *Fifth Summ.* 1: 49, 178, 188, 190, 201, & 371 (1971) and 2: 917. 1971; Moldenke, *Phytologia* 22: 489 (1972) and 23: 293 & 295. 1972.

Additional illustrations: Schnack, Fehleisen, & Cocucci, *Revist. Fac. Agron. La Plata* 35: [54], fig. 3. 1959.

Recent collectors have found this plant growing in old fields and in fertile soil of low campos. Montes reports that it is rather abundant in Misiones, Argentina, where it is also used in popular medicine ("de sabor muy amargo"). Additional vernacular names (besides those previously reported by me) for the plant are "berbena" and "verbena", and it has been encountered at 1800 m. altitude in Salta. It has been collected in fruit (in addition to the months previously reported) in April, July, and October. Montes refers to it as an "annual-biennial herb". The corollas are described as having been "blue" on Aguilar 88, Guimarães 99, Ibarrola 1898, J. E. Montes 765, 14719, & 14731, Olea 198, T. Rojas 11882, Ruiz Huidobro 2087, and G. J. Schwarz 624, "violet" on G. J. Schwarz 821, Stellfeld 1525, and Troncoso 357, and "white" on A. G. Schulz 6134. Risso 263 is anomalous.

The Gallinal, Aragone, Bergalli, Campal, & Rosengurtt 1269, Herb. Herter 95525, Lindman A.3651, T. Rojas 11660, and Rosengurtt A.1241 & B.507, previously cited by me as V. litoralis H.B.K., seem more probably to represent V. montevidensis instead. The R. Alvarez 951 and W. A. Archer 4788, first cited by me as V. litoralis and now as V. litoralis var. caracasana (H.B.K.) Briq., have much the general appearance of large-spiked V. montevidensis. Their status needs more intensive investigation.

Troncoso (1965) says of V. montevidensis: "Originaria del Uruguay y región mesopotámica vecina. Abunda en praderas hígrófilas, borde de zanjas y cercos". She cites from Buenos Aires only Cabrera 6298 and Pastore s.n. [*Herb. San Isidro* 1147], as well as Macbride's type photograph 17432. Schnack and his associates (1959) report that this plant is apomictic in its reproduction.

Material has been misidentified and distributed in some herbaria as V. brasiliensis Vell.

Additional citations: LOUISIANA: Avoyelles Par.: J. K. Small s.

n. [Burkie, May 1931] (N, N, N, N, Rf). Ouachita Par.: Thomas, Thomas, & Thomas 708 (N). BRAZIL: Paraná: Guimarães 99 [Herb. Fac. Farmácia 5779] (W-2527766); Hatschbach 12075 (Ac), 14731 (N, Rf), 27659 (Ac, N); Stellfeld 1525 [Herb. Fac. Farmácia 5868] (W-2527750). Rio Grande do Sul: Palacios & Cuezzo 283a (N), 994 (N). PARAGUAY: Lindman A.3651 (N). URUGUAY: H. H. Bartlett 20689 (N), 21301 (N); Gallinal, Aragone, Bergalli, Campal, & Rosengurtt 1269 (N); Herb. Herter 95525 (N); Rosengurtt A.1241 (N), B.507 (N). ARGENTINA: Buenos Aires: R. Alvarez 311 (N), 453 (N), 609 (N), 746 (N), 779 (N); A. T. Hunziker 2305 (W-2595170); Nicora 377 (W-2595171); Troncoso 357 (W-2595174). Catamarca: Pierotti "h", in part (N); Risso 263 (N). Chaco: Aguilar 88 (N); T. Rojas 11660 (N), 11882 (N). Córdoba: T. Meyer 12915 (N). Corrientes: Ibarrola 1893 (N); Ruiz Huidobro 2087 (N). Entre Ríos: F. Y. Geofroy 48 (N). Formosa: I. Morel 2188 (N), 3072 (N), 3203 (N), 3385 (N), 4107 (N), 4982 (N), 5132 (N), 5243 (N), 6464 (N). Mendoza: A. G. Schulz 6134 (N). Misiones: Krapovickas, Cristóbal, Pire, & Tressens 15302 (Ac), 15322 (Rf); J. E. Montes 765 (N), 1237 (Se-130263), 14719 (N, N), 14731 (Au-271308), 27659 (Au-271283, W-2556187); G. J. Schwarz 624 (N), 821 (N), 6340 (N). Salta: Pierotti 1025 (N). Santa Fé: R. Alvarez 973 (N). Tucumán: Borsini 901 (N); F. Ortiz 23 (N), s.n. [30/5/45] (N).

VERBENA MORICOLOR Moldenke

Synonymy: Glandularia moricolor Schnack & Rubens, Bol. Soc. Argent. Bot. 13: 205, hyponym. 1970.

Additional bibliography: Moldenke, Phytologia 11: 473. 1965; Schnack & Rubens, Bol. Soc. Argent. Bot. 13: 205. 1970; Solbrig, Princ. & Meth. Pl. Biosystem. 76. 1970; Moldenke, Fifth Summ. 1: 201 (1971) and 2: 521 & 917. 1971.

VERBENA MORICOLOR Moldenke x V. PERUVIANA (L.) Britton

Bibliography: Solbrig, Princ. & Meth. Pl. Biosystem. 76. 1970; Moldenke, Fifth Summ. 2: 917 & 970. 1971.

Solbrig (1970) describes the artificial hybridization of these two species as well as the hybridization of V. megapotamica Spreng. with V. peruviana: "Crosses between G[landularia] peruviana and two other morphologically distinct species, G. megapotamica and G. moricolor, on the other hand, yielded hybrids that were more fertile. The cross between G. peruviana and G. megapotamica, for example, was approximately 60 percent pollen fertile and the cross between G. peruviana and G. moricolor was approximately 80 percent pollen fertile. Morphologically, G. megapotamica is similar to G. peruviana although it has flowers of a different color and is more erect. Glandularia moricolor, on the other hand, is quite distinct, having elliptic leaves, erect habit, smaller and

deep purple flowers, and a more compact inflorescence. Neither of these two species grows together with G. peruviana. Glandularia megapotamica grows in the subtropical gallery forest of northeastern Argentina, Brazil, and Paraguay, whereas G. moricolor is a species of the margins of the subtropical forest of northern Argentina. Consequently, the genetic isolation between these two species and G. peruviana is not complete. However, they are effectively isolated reproductively because they do not grow together."

As yet I have not seen any herbarium material as vouchers for the putative hybrid, and the statement about the similarity in habit between V. megapotamica and V. peruviana leads me to wonder about the accuracy of the identification of one or the other of the two plants used in the crosses. Because of this uncertainty I have not as yet named the V. moricolor hybrid referred to above. The hybrid between V. megapotamica and V. peruviana, on the other hand, has been called xV. schnackii Moldenke.

VERBENA MULTICAULIS Raf.

Additional bibliography: Moldenke, *Phytologia* 11: 473. 1965; Moldenke, *Fifth Summ.* 1: 66 (1971) and 2: 793 & 917. 1971.

VERBENA MULTIGLANDULOSA Moldenke

Additional bibliography: Moldenke, *Phytologia* 16: 102. 1968; Moldenke, *Fifth Summ.* 1: 193 (1971) and 2: 917. 1971.

VERBENA NANA Moldenke

Synonymy: Glandularia nana Schnack & Rubens, *Bol. Soc. Argent. Bot.* 13: 205, hyponym. 1970.

Additional bibliography: Angely, *Fl. Anal. Paran.*, ed. 1, 572. 1965; Moldenke, *Phytologia* 13: 211. 1966; Angely, *Fl. Anal. Fito-geogr. Est. S. Paulo*, ed. 1, 4: 840 & xix, map 1395. 1970; Schnack & Rubens, *Bol. Soc. Argent. Bot.* 13: 205. 1970; Moldenke, *Fifth Summ.* 1: 178, 188, & 201 (1971) and 2: 917. 1971.

Rojas describes this species as 30--40 cm. tall and found it growing on rocky riverbanks in Paraguay.

Additional citations: PARAGUAY: T. Rojas 13872 (N). ARGENTINA: Formosa: I. Morel 3295 (N), 3754 (N).

VERBENA NEOMEXICANA (A. Gray) Small

Additional & emended synonymy: Verbena canescens var. neo-mexicana A. Gray, *Syn. Fl. N. Am.*, ed. 1, 2 (1): 337. 1878. Verbena neomexicana Perry ex Moldenke, *Fifth Summ.* 2: 684, in syn. 1971. Verbena neomexiczna (A. Gray) Small ex Moldenke, *Fifth Summ.* 2: 685, in syn. 1971.

Additional bibliography: Howell & McClintock in Kearney & Peebles, *Ariz. Fl.*, ed. 2, 726 & 728. 1960; Lewis & Oliv., *Am. Journ. Bot.* 48: [639] & 641, fig. 18. 1961; Hocking, *Excerpt. Bot.* A.6: 91. 1963; Moldenke, *Phytologia* 16: 189 & 200. 1968; Whittaker & Niering, *Journ. Ecol. [Brit.]* 56: 528. 1968; Bolkh., Grif, Matvej., & Zakhar., *Chrom. Numb. Flow. Pl.* 717. 1969; Rickett,

Wild Fls. U. S. 3 (2): 365, [367], & 551, pl. 111 (1969) and 4 (3): 540, [543], & 799, pl. 177. 1970; Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1876 & 1877. 1970; Moldenke in Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1315 & 1321. 1970; Moldenke, Fifth Summ. 1: 20, 30, 59, 62, 63, 66, 76, 371, & 396 (1971) and 2: 659, 672, 683--685, 687, 705, 707, & 917. 1971; Moldenke, Phytologia 22: 485 & 500 (1972) and 23: 192, 236, 242, & 302. 1972.

Illustrations: Rickett, Wild Fls. U. S. 3 (2): [367], pl. 111 (in color) (1969) and 4 (3): [543], pl. 177 (in color). 1970.

Recent collectors describe this plant as erect, becoming 4 inches to 1 foot tall about bushes, growing in deserts, in roadside washes, and on silty slopes. Stewart found it "common on dry hillsides" in Coahuila, Mexico. Kruckeberg found it to be "common" in campground areas in oak-pinyon-juniper associations in Brewster County, Texas. Whittaker & Niering (1968) found it growing "to some extent" on limestone in southeastern Arizona, while in the same state Howell & McClintock (1960) describe it as "common" on foothills and in canyons at altitudes of 2000 to 6000 feet, flowering from March to October.

In addition to months previously reported by me, it has been collected in fruit in April and June. The corollas are described as having been "lavender" on Kruckeberg 4796, "blue" on R. M. Stewart 402, and "purple" on Johnston & Muller 1057 & 1067 and Powell, Turner, & Magill 2063.

The M. Mitchell s.n. [4/14/37] distributed as V. neomexicana is actually V. bracteata Lag. & Rodr.; Atwood 2008, Ballinger s.n. [October 24, 1959], and C. M. Rowell 5113 are V. canescens var. roemeriana (Scheele) Perry; A. Davis 32 is V. gooddingii Briq.; W. W. Jones s.n. [Aug. 10, 1926] is V. gracilis Desf.; Leverich 22, E. Marsh 249, B. Pittman 36, and C. M. Rowell 11635 are V. neomexicana var. hirtella Perry; W. W. Jones s.n. [Cabullona], Kruckeberg 4928 (in part), and S. S. White 3310 are V. neomexicana var. xylopoda Perry; Kruckeberg 4928 (in part) is V. menthaefolia Benth.; C. H. Muller 8214 and C. M. Rowell 11147 are V. perennis Wooton; Pennington 74 is V. pinetorum Moldenke; and Meebold 26696 is V. racemosa Eggert.

Additional citations: TEXAS: Brewster Co.: Kruckeberg 4796 (N); C. H. Mueller 8138 (Ik). Jeff Davis Co.: Tharp & Janszen 49-1144 (Au--122363). NEW MEXICO: Grant Co.: E. L. Greene s.n. [August 11, 1880] (W--2606263), s.n. [Pinos Altos Mtns., August 23, 1880] (Pa). MEXICO: Chihuahua: Powell, Turner, & Magill 2063 (Au-296948). Coahuila: Johnston & Muller 193 (Au--301900, Mi), 1057 (Au--301851), 1067 (Mi); R. M. Stewart 402 (Au--301426).

VERBENA NEOMEXICANA var. HIRTELLA Perry

Additional synonymy: Verbena neomexicana hirtella Perry apud Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. 6:] 1876. 1970.

Additional & emended bibliography: Lewis & Oliv., Am. Journ. Bot. 48: [639]—641, fig. 18. 1961; Hocking, Excerpt. Bot. A.6: 91 (1963) and A.9: 365. 1965; Moldenke, Phytologia 16: 189. 1968; Moldenke in Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1315 & 1321. 1970; Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1876. 1970; Moldenke, Fifth Summ. 1: 20, 59, 62, 63, & 76 (1971) and 2: 683, 685, & 917. 1971; Moldenke, Phytologia 23: 192 & 242. 1972.

Emended illustrations: Lewis & Oliv., Am. Journ. Bot. 48: 640, fig. 18. 1961.

Recent collectors have found this plant growing among limestone rocks. Youngblood calls it an "herb locally frequent in rocky sand" in Brewster County, Texas. The corollas are described as having been "purple" on D. Youngblood 40 and "blue-purple" on Leverich 22. Material has been misidentified and distributed in some herbaria under the name V. neomexicana Perry. On the other hand, the J. H. Thomas 8185, distributed as V. neomexicana var. hirtella, is (in at least some herbaria) actually V. canescens var. roemeriana (Scheele) Perry, as is also G. L. Webster 453, while Tharp & Janszen 49-1144 is typical V. neomexicana (A. Gray) Small.

Additional citations: TEXAS: Brewster Co.: Leverich 22 (Lk); E. Marsh 249 (Au—214401); E. G. Marsh 684 (Au—212535); B. Pittman 36 (Lk); C. M. Rowell 11635 (Lk); D. Youngblood 40 (Lk). Jeff Davis Co.: Tharp & Janszen 49-1144 (N). MEXICO: Durango: Johnson & Johnson 1718 (Ws).

VERBENA NEOMEXICANA var. XYLOPODA Perry

Additional bibliography: Howell & McClintock in Kearney & Peebles, Ariz. Fl., ed. 2, 728. 1960; Moldenke, Phytologia 16: 102 & 103. 1968; Rickett, Wild Fls. U. S. 4 (3): [543], pl. 177. 1970; Moldenke in Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1315 & 1321. 1970; Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1877. 1970; Moldenke, Fifth Summ. 1: 30, 59, 63, 66, & 76 (1971) and 2: 659, 685, 707, & 917. 1971; Moldenke, Phytologia 23: 302. 1972.

Illustrations: Rickett, Wild Fls. U. S. 4 (3): [543], pl. 177 (in color). 1970.

Recent collectors describe this plant as a perennial herb, 1 m. tall, and found it growing on ridges, in sandy pockets of clay flats, in juniper-grassland associations, and in riparian habitats. Kruckeberg found it in openings of woodlands consisting of Quercus arizonica, Q. hypoleuca, and Pinus leiophylla. Howell & McClintock (1960) describe it as having "slightly glandular inflorescence and a larger corolla than [the] typical form" and note that "This is the chief Arizona representative of the species". The corollas are said to have been "blue" on S. S. White 3099 & 3310, "lavender-blue" on R. V. Moran 14592, and "purple" on Gentry & Fox 11735. Moran describes the plant as "scarce".

Material of this variety has been misidentified and distributed in some herbaria as V. xutha Lehm. On the other hand, the R. Runyon 2611, distributed as V. neomexicana var. xylopoda, is V. cloverae Moldenke, while R. Runyon 4869 seems to be a mixture of V. cloverae and V. plicata Greene.

Additional citations: ARIZONA: Cochise Co.: Pinkava, Keil, & Lehto 14553 (N, N). Yavapai Co.: W. S. Lewis s.n. [Herb. Blake 956] (Ld). MEXICO: Baja California: Gentry & Fox 11735 (Mi); R. V. Moran 14592 (Sd--68132), 15095 (Sd--68164). Chihuahua: Kruckeberg 4928 (N); Townsend & Barber 192 (Au--292061). Sonora: W. W. Jones s.n. [Cabullona] (Sd--41133); S. S. White 3099 (Sd--61803), 3310 (Sd--61804). Tamaulipas: Stamford, Lauber, & Taylor 2381 (Se--147631).

xVERBENA NEQUAM Moldenke

Additional bibliography: Moldenke, *Phytologia* 11: 473. 1965; Moldenke, *Fifth Summ.* 1: 371 (1971) and 2: 521, 666, 678, 700, & 917. 1971.

xVERBENA NISA Moldenke

Additional bibliography: Moldenke, *Phytologia* 11: 473--474. 1965; Moldenke, *Fifth Summ.* 1: 371 (1971) and 2: 522, 689, 700, & 917. 1971.

VERBENA NIVEA Moldenke

Additional bibliography: Moldenke, *Phytologia* 13: 211--212. 1966; Moldenke, *Fifth Summ.* 1: 184 & 201 (1971) and 2: 685 & 917. 1971.

VERBENA NIVEA f. ROSEA Moldenke

Additional bibliography: Moldenke, *Phytologia* 13: 212. 1966; Moldenke, *Fifth Summ.* 1: 201 (1971) and 2: 685 & 917. 1971.

xVERBENA NOACKI Moldenke

Additional bibliography: Moldenke, *Phytologia* 10: 192. 1964; Moldenke, *Fifth Summ.* 1: 371 (1971) and 2: 673, 674, & 917. 1971.

xVERBENA NOTHA Moldenke

Additional bibliography: Moldenke, *Phytologia* 11: 474. 1965; Moldenke, *Fifth Summ.* 1: 371 (1971) and 2: 672, 685, & 917. 1972.

VERBENA OCCULTA Moldenke

Additional bibliography: J. F. Macbr., *Field Mus. Publ. Bot.* 13 (5): 614, 615, & 627. 1960; Moldenke, *Phytologia* 11: 471. 1965; Moldenke, *Résumé Suppl.* 16: 5 (1968) and 17: 3. 1968; Anon., *Biol. Abstr.* 50 (3): B.A.S.I.C. S.201. 1969; Moldenke, *Biol. Abstr.* 50: 1493. 1969; Hocking, *Excerpt. Bot. A.15:* 422. 1970; Moldenke, *Fifth Summ.* 1: 144 (1971) and 2: 917. 1971; Moldenke, *Phytologia* 22: 466 (1972) and 23: 284. 1972.

Recent collectors have found this plant growing in rocky-sandy

soil, flowering in March, June, and July (in addition to the months previously reported by me), and fruiting in August. They describe it as a shrub 3 feet tall. Fosberg calls it a "low much branched herb, common on jalca or mountain meadow". The corollas are described as having been "blue" on Edwin & Schunke 3692, "violet" on Aguado 6761, "white-violet" on López Guillén 3787, and "white to purple" on F. R. Fosberg 28192.

Material has been misidentified and distributed in some herbaria as V. berterii (Weisn.) Schau. and V. laciniata (L.) Briq. The Ferreya 6586, cited by Macbride (1960), is the type collection of f. alba Moldenke.

Additional citations: PERU: Amazonas: Edwin & Schunke 3692 (N); Soukup 4960 (W--2565565). Cajamarca: F. R. Fosberg 28192 (Ac). La Libertad: Aguado 6761 (Tp). Lima: López Guillén 3787 ["3387"] (Ac).

VERBENA OCCULTA f. ALBA Moldenke

Additional bibliography: J. F. Macbr., Field Mus. Publ. Bot. 13 (5): 627. 1960; Moldenke, Phytologia 10: 194. 1964; Moldenke, Fifth Summ. 1: 144 (1971) and 2: 917. 1971.

Vargas Calderón found this plant growing at 2000--2600 m. altitude, in flower and fruit in October.

Additional citations: PERU: Ancash: Vargas Calderón 10276 (W--2520241).

VERBENA OCCULTA f. AURANTIACA Moldenke

Bibliography: Moldenke, Phytologia 17: 344. 1968; Moldenke, Résumé Suppl. 17: 3. 1968; Anon., Biol. Abstr. 50 (3): B.A.S.I.C. S.201. 1969; Moldenke, Biol. Abstr. 50: 1493. 1969; Hocking, Excerpt. Bot. A.15: 422. 1970; Moldenke, Fifth Summ. 1: 144 (1971) and 2: 917. 1971.

Citations: PERU: La Libertad: Angulo 1383 (Z--type).

VERBENA OFFICINALIS L.

Additional & emended synonymy: Verbena vulgo appellata Anguill., Sempl. 266. 1561. Verbenaca volgare del Matthioli Pona, Pl. Simp. Bald. Mont. 3. 1595. Verbenaca recta Dodon., Stirp. Hist. Pemptad., ed. 2, 150. 1616. Verbena lusitanica, latifolia, procerior Tourn., Compl. Herb. 357. 1719. Verbena urticae-folia, canadensis, foliis incis, flore majore Tourn., Compl. Herb. 357. 1719. Verbena communis caeruleo flore Tourn. ex Manetti, Virid. Florent. 98. 1751. Verbena vulgaris Hill, Brit. Herb. 356 & [536]. 1756. Verbena foliis tripartitis, rugosis, spicis nudis gracillimis Haller, Hist. Stirp. Ind. Helv. 1: 96--97. 1768. Verbena tetrandra spicis filiformibus paniculatis, foliis multifido laciniatis, caule solitario L. ex Haller, Hist. Stirp. Ind. Helv. 1: 96. 1768. Verbenaca Camer. apud J. E. Sm., Engl. Fl., ed. 1, 3: 71, in syn. 1825. Tetrandra, spicis filiformibus paniculatis, foliis multifido-

laciniatis caule solitario Willd. ex Lanfrossi, Giorn. Fis. Chim. Stor. Nat. Med. & Art., ser. 2, 10: 48. 1827. Verbena communis caeruleo flore (foliis dissectis) Micheli ex Bertol., Fl. Ital. 6: 261, in syn. 1844. Verbena communis caeruleo flore Zannich. ex Bertol., Fl. Ital. 6: 261, in syn. 1844. Verbena vulgo appellata Ang. ex Bertol., Fl. Ital. 6: 260, in syn. 1844. Verbenaca volgare del Matthioli Pon. ex Bertol., Fl. Ital. 6: 260, in syn. 1844. Verbena communis, flore caeruleo Cip. ex Bertol., Fl. Ital. 6: 260, in syn. 1844. Verbena n. 219 Haller ex Bertol., Fl. Ital. 6: 261, in syn. 1844. Verbena spura L. ex Jacobs & Burlage, Ind. Pl. N. C. 251, sphalm. 1958. Verbena officinalis L. ex R. I. Patel, For. Fl. Melghat 353, sphalm. 1968. Verbena officinalis Cham. ex Angely, Fl. Anal. Fitogeogr. Est. S. Paulo, ed. 1, 4: 839, sphalm. 1970.

Additional & emended bibliography: Virgil., Eccl. 8: v. 64--65. 37 B.C.; Propertius, Elegies 4 (3): v. 57--58. 26 B.C.; Virgil., Aeneid 12: v. 119--120. 19 B.C.; Plin. Secund., Hist. Mund. Nat. lib. 22, cap. 2. 77 A.D.; Macer Floridus, De Virib. Herb., ed. 1, ff. xxxiii--xxxv (1477) and ed. 2, pr. 1, ff. xxxiii--xxxv. 1490; Macer, Virtut. Herb., ed. 1, "k"--[ki]. 1506; Brunf., Herb. Viv. Icon., ed. 1, 1: 119, 120, & [267] (1530) and ed. 2, 119, 120, & [267]. 1532; Fuchs, Hist. Plant. Basil. 592--593. 1542; Anguill., Sempl. 266. 1561; Macer, Virtut. Herb., ed. 2, [7]. 1581; Macer, Herb. Virib. 133--135, 164, 167, & 199--200. 1581; Matth., Disc. Valgr., ed. 1, 2: 399 & 1107. 1585; Durante, Herb. Nuov., ed. Rom., 469. 1585; Camer. in Matth., Pl. Epit. Util. 797. 1586; Matth., Disc. Valgr., ed. 2, 2: 1107. 1586; Pona, Pl. Simp. Bald. Mont. 3. 1595; Matth., Herb. Aneb Bylinar 380--381. 1596; Gerarde, Herb., ed. 1, 580--582, fig. 1. 1597; Dodon., Stirp. Hist. Pemptad., ed. 2, 149--151. 1616; Gerarde, Herb., ed. 2, 717--719, fig. 1. 1633; J. Schröder, Pharm. Med.-Chem., ed. 2, 4: 167--168. 1649; J. Schröder, Chymic. Dispens. 1669; Lonic., Kreuterb., pr. 1, 310--311. 1679; Rivin., Ord. Pl. Irreg. Monop. 81, pl. 56. 1690; Cupani, Hort. Cathol. 227. 1696; Tourn., Inst. Rei Herb., ed. 2, 2: 200, pl. 94. 1700; Tourn., Compl. Herb. 357--359 & 618. 1719; Tourn., Inst. Rei Herb., ed. 3, 2: 200, pl. 94. 1719; A. Haller, Enum. Meth. Stirp. Helv. Indig. 1: 660--661. 1742; Segui-er, Pl. Veron. 1: 312. 1745; Micheli, Cat. Plant. Hort. Caes. Florent. 98 & 182. 1748; L., Mat. Med., ed. 1, 6 & 208. 1749; Manetti, Virid. Florent. 98. 1751; Segui-er, Pl. Veron. Suppl. 142. 1754; J. Hill, Brit. Herb. 356. 1756; Kalm, Resa Nor. Am. 2: 248. 1756; Kalm, Beschrieb. Reise Nörd. Am. 2: 267. 1757; L., Sp. Pl., ed. 2, 29. 1762; L., Gen. Pl., ed. 6, 14. 1764; Crantz, Inst. Rei Herb. 1: 573. 1766; A. Haller, Hist. Stirp. Indig. Helvet. 1: [96]--97, 183, & 202. 1768; Kalm, Travels N. Am., ed. 1, 1: 119. 1770; Schreb. in L., Mat. Med., ed. 2, pr. 1, 38 & [272]. 1772; [Retz.], Nom. Bot. 11. 1772; Kalm, Travels N. Am., ed. 2, 1: 93. 1772; Scop., Carniol., ed. 1, 1: 433. 1772; O. F. Müll. in Oeder, Icon. Pl. Fl. Dan. 4: 5, pl. 628. 1775; Sabbat in Martelli, Hort. Roman. 3: 10--11, pl. 56. 1775; W. Curtis, Fl. Lond., ed. 1, 1

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Recent collectors have found this plant growing in sandy soil, disturbed areas, waste ground, and clearings in evergreen forests. They describe it as a typical ruderal plant. Koelz refers to it as 18 inches to 5 feet tall. Manning (1965) describes its fruit as consisting of four reddish-brown 1-seeded nutlets each weighing about 0.0004 gm., dispersed in mud or (in the calyx) adhering to the coats of animals or to clothing. Bolkhovskikh and his associates (1969) point out that the diploid number of chromosomes for *Verbena officinalis* is given as 12 by Schnarf (1923) and by Patermann (1935), but as 14 by Junell (1934), Tischler (1934), Dermen (1936), Noack (1937), and Schnack & Covas (1944). Hsu (1967) says that at diakinesis there are seven bivalents.

The color of the corolla is given as "pale-lilac" by Paque (1902) and Sauzé & Maillard (1872), "rose" on Koelz 15757, "rose-lavender" on Koelz 16144, "rose-purple" on Koelz 16839, "purple-blue" on Beauchamp 1178, "pale-blue" on E. H. Walker 8101, "light-purple" on Banerjee & Shakya 5596, "mauve" on E. A. Robinson 5596, "bluish-purple" on A. Smith 211, "purple" on R. E. Cooper 5045 and A. Smith 50 and by Gupta (1967), "violet" by Deb, Sen-gupta, & Mallick (1968), "lilac" by Bouloumoy (1930), Banerji (1965), and Patzak & Rechinger (1967), and "white with bluish tinge" by Kapoor (1968).

The time of blooming is given as July by Gattinger (1894) in Tennessee, "May to Autumn" by Tornabene (1891) in Italy, June to October by Polunin (1969) in Europe, by Sauzé & Maillard (1880)

in Belgium, and by Heimans, Heinsius, & Thijsee (1965) in the Netherlands, June to September by Martin (1965) in England and Wales and by Zukowski (1967) in Poland, June to November by Ohwi (1965) in Japan, July to September by Tatnall (1946) in Delaware, Sauzé & Maillard (1872) in Belgium, Dietrich (1824) in Germany, Martens & Kemmler (1882) in Württemberg, and Thomé (1888) in Germany, July to October by Druce (1897) in England, March to June by Datta & Majumdar (1966) in India, and April to October by Maheshwari (1963) in India.

Additional vernacular names applied to this plant, in addition to the many previously reported by me, are "akicamiyu gusa", "akimmayō", "akitsumayō", "beneran", "bé-pin-chháu", "birbina", "blood of Mercury", "briina", "brivina", "bukexrem", "bunj", "colombaria", "Dankbarkraut", "devil's bane", "devil's hate", "Eisenrich", "Eiserisch", "enchantment herb", "erba bona", "erba colombina", "erba croce", "erba crocetta", "erba crocina", "erba medica", "erba sacra", "erba S. Giovanni", "European verbena", "gebräuchlicher Eisenhart", "gemeiner Eisenhart", "gogerchin otu", "herbal vervain", "herba sacra", "herba veneris", "hierba de todos los males", "holy plant", "horse- whip", "Isenkraut", "karatā", "kuma-tsu-zura", "kumatuzura", "Männlin", "mā tiên tháo", "officinis", "peristereon", "peristereum", "simplers' joy", "spike vervain", "spurious vervain", "Taubenkraut", "tears of Juno", "té-bí-chháu", "thin-bé-pin", "verbena officinal", "verbenae herba", "vermena", "vermenaca", "verminaca", and "verveine sauvage".

Stewart (1967) informs us that this species is a very common weed in lower Swat, Pakistan. Carleton (1962) records the additional vernacular names "countryman's treacle" [a name also applied to Ruta graveolens], "hyssop" [also applied to Gratiola officinalis, Hyssopus officinalis, and Teucrium pseudohyssopus], "tears-of-Isis", and "tears-of-Juno". He tells us that the name "herb-grace", applied to Verbena officinalis, is likewise applied to Ruta graveolens, the name "shrubby-verbena" is applied also to members of the genus Lantana, and "sweet-scented-verbena" to Aloysia triphylla (L'Hér.) Britton. Miall (1969) states that "primitive medicine gave the name of....Verbena to Verbena officinalis and to the groundsel". Hatton (1909) reminds us that to the ancients "Verbena was the name used for a sacrificial herb, whatever it was". Polunin & Huxley (1966) report that "Hippocrates considered this to be one of the few all-curing herbs".

Uphof (1968) avers that Verbena officinalis is an "Annual or perennial herb. Origin uncertain, probably from the Mediterranean region, escaped throughout Europe, Africa, Asia, Australia, N. and S. America. Was in ancient times well known. Was called in ancient Egypt 'Tears of Isis'. The entire plant, Herba Sancta, was burned during ceremonies. At present Herba Verbenae is used as astringents, diuretic, diaphoretic; for its action on the uterus and as emmenagogue. Externally employed for wounds that are difficult to heal, ulcers and skin ailments."

Beston (1950) informs us that "There grows in the garden here a very ancient plant which has been a part of the magic and relig-

ion of the most diverse European cultures, in England being a sacred plant of the Druids, in Scandinavia a plant of the priests of Thor, in Greece and Rome a plant so holy that no other might be used to brush the altars of Olympian Jove. Yet it is not a stately plant but a quite simple one, almost a thing of the roadsides and the fields. 'Hierobotane' the Greeks called it, the 'Holy Plant'; and 'Herba Sacra' the Romans. To us it is Spike or Herbal Vervain, the Verbena Officinalis of Linnaeus. Whatever list of annuals I make for the garden, this ancient herb is sure to be written down. It has enough garden presence of a rustic kind to justify its inclusion, being in no way boorish or uncivil, and it is easy to start from seed and easy to grow....Seed....is still used in domestic medicine as a help in the early stages of colds and fevers.....to be had....only from European firms. The herb is not particular about soil but likes a sunny place, and I have put my plants well back in the border, planting them in a close-growing line, and facing them with some shorter and more compact perennial. To those interested in magic and religion, there is no herb in the garden more worthy of attention, for this simple plant without fragrance, without an outer look of power, without a flower of significance, was singled out from among all other plants and herbs as the most sacred of the growing things of earth between the Pillars of Hercules and the roots of the Caucasus."

Clair (1961) gives us another fascinating account of this plant:

"Bring your garlands, and with reverence place
The vervain on the altar. BEN JONSON

Strange that a herb of such insignificant appearance should have held so important a place in mankind's estimation through long centuries; but it was a sacred and magic herb in Persia, in ancient Greece and Rome, and in ancient Britain, where the Druids had a special reverence for it, ordering it to be gathered about the rising of the great dog star, but only when neither the sun nor moon were above ground at the time to see it. Moreover, those who uprooted it were expected to place upon the spot where it had grown honey in the comb to make amends for having deprived the earth of so holy a herb.

"The Greeks called it hiera botane, or Holy Herb, and in France to this day Vervain is popularly called Herbe sacrée. From time immemorial it was the symbol of enchantment, for white and against black magic. In philtres it engendered love, and was one of the plants dedicated to Venus, for did not Venus Victrix wear a crown of Myrtle interwoven with Vervain? The Romans purified their houses with it to ward off evil spirits, and with it they swept the altars of their gods.

"Like Dill, it possessed the power of overcoming the spells of the sorcerer, being ' 'gainst witchcraft much avayling'. Edith Wheelwright tells us that the Welsh in the Middle Ages called it 'Devil's Bane', and after cutting it in the dark, brought it into the churches to use as a sprinkler of holy water.

"The Romans were great observers of the custom of New Year's

gifts, and those royal colleagues Romulus and Tatius ordained that every year Vervain should be offered to them with other gifts as an augury of good fortune for the coming year.

"Vervain has always taken an important place in herbal medicine since the days of Dioscorides. It was considered efficacious in cases of scrofula, and Lupton, in his Book of Notable Things (1660), says 'the root of Vervain hanged at the neck of such as have the king's evil, it brings a marvellous and unhoped help'. It was also held to be a cure for the ague and in that curious book of Dr John Schroder, the Chymical Dispensatory (1669), we read that 'some cure Tertians and Quartans peculiarly therewith: in the Tertian they take the third joynt from the Earth and gather it by pulling it upward and give it to be drunk; and in a Quartan the fourth joynt.' This I fancy the good doctor cribbed from Dioscorides. But, as Gerarde says: "many odde old wives fables are written of Vervaine."

The common names, "Pigeon's grass", "columbine", etc., were applied to this plant because doves were said to be fond of hovering around it. "As an herbe of good omen Vervain was one of those associated with the Eve of St John, and in an old book called Ye Popish Kingdome appears the following couplet:
'And young men round about with maides doe dance in every streete,
With garlands wrought of Mother-wort, or else with Vervaine
sweete.'

.....It is slightly aromatic when bruised....In tase it is bitter and contains a glucoside, verbenalin, which is employed in herbal medicine as a febrifuge and in nervous complaints. Some say that as an anti-thermic it compares favorably with quinine...

'Here holy vervayne and here dill,

'Gainst witchcraft much availing.'

The Muses' Elysium.....

'Trefoil, Vervain, John's Wort, Dill,

Hinder witches of their will.'.....

'Whosoever weareth Vervin or Dill

May be bold to sleep on every hill."

Coon (1963) explains that "The constituent which brings Verbena into the medical field is a bitter glucoside and tannin, a simple infusion (2 teaspoons to 1 pint) being employed as a diaphoretic, tonic, and expectorant. There are, in herbal literature, no strong claims made for its efficacy.....An exploration of the story of vervain leads us down some ancient avenues and provides an explanation for belief in the efficacy of the plant in herbal medicine. This plant was first used by the Romans. They gave us the name 'verbena', which to them meant any one of a number of plants used in sacrifices, purgation and supplications. Finally the name was attached to one particular plant, and the virtues ascribed to Verbena by the Romans were passed along through the centuries, until, in the Middle Ages, it was said to have been a plant which, growing on the Mount of Calvary, staunched the wounds of the Saviour. The transferral of virtues from pagan to Christian (it has happened in our Christmas celebrations) was not unusual, and ver-bena early became one of the holy herbs associated with St. John."

[to be continued]